

Message from the SAIP, NEMI, ECRF, Journal First, and Workshops Track Chairs

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I. INTRODUCTION

The 18th IEEE International Conference on Software Architecture (ICSA 2021) solicited different types of submissions structured into the following tracks: the main Technical Track (included in the ICSA main proceedings), the Software Architecture in Practice (SAIP) track, the New and Emerging Ideas (NEMI) track, the Early Career Researchers Forum (ECRF), the Journal First track, and the Workshop track (included in the companion volume of ICSA 2021 proceedings). Each of these tracks, except for the Technical Track, is presented in the following sections.

II. SOFTWARE ARCHITECTURE IN PRACTICE TRACK

The ICSA Software Architecture in Practice (SAIP) track provides practitioners and researchers a platform to present and discuss recent innovations and findings in the field of software architecture by means of experience reports and talks. SAIP contributions address real-world software architecture challenges through systematic investigations. The focus of this track is industry-relevant experiences and best practices. Evaluation criteria for the submissions included potential impact, repeatability, and real-world focus.

This year the ICSA SAIP program committee received eleven submissions from the US, Europe, and Asia, and ultimately accepted six papers. Multiple contributions discuss architectural design using microservices, as many practitioners are currently in the process of migrating their systems to this architectural style. Other submissions deal with non-functional properties, such as cyber-security, performance, scalability, and sustainability. The program chairs would like to express their gratitude to all contributing authors, as well as all program committee members for providing constructive and thoughtful feedback.

III. NEW AND EMERGING IDEAS TRACK

The goal of the New and Emerging Ideas (NEMI) track at ICSA 2021 was to encourage the software architecture community to propose new software architecture research visions and ideas, which can potentially challenge the status quo of the software architecture discipline (research and practice), and point to new directions and opportunities.

This year, the NEMI track was even more interactive than in previous years, featuring short presentations and rich discussion during the sessions, as well as an expert panel on the topic of “Software Architecture in the COVID-19 Reality” that included

interaction with other participants. Our enlightened NEMI panelists were: Paola Inverardi, University of L'Aquila, Italy; Patricia Lago, Vrije Universiteit Amsterdam, The Netherlands; Nenad Medvidovic, University of Southern California, USA; and Danny Weyns, Katholieke Universiteit Leuven, Belgium.

The NEMI track program committee this year received thirteen submissions and each paper went through a rigorous evaluation process. Papers were reviewed by at least three reviewers followed by a discussion. At the end of the process, three papers were accepted and discussed.

IV. EARLY CAREER RESEARCHERS FORUM

The goal of the Early Career Researchers Forum is to inspire and bring together early career researchers in the field of software architecture. The forum provides a vibrant place for discussing potential and ongoing research in any stage, from ideas to results. The forum strives to provide a friendly environment for early career researchers to get feedback on their work, exchange experiences, ask questions, and explore available research pathways. In addition, the forum stimulates interaction between early career researchers and experienced academic and industry members of the community by offering a two-stage submission process that will enable early career researchers to obtain one-on-one feedback on their papers before submitting them for review. This year, two papers have been accepted for presentation at this track, related to (i) ethics in software architecture decision making, and (ii) self-adaptation for software-defined security in the context of Internet-of-Things (IoT) networks.

V. JOURNAL FIRST TRACK

The goal of the Journal First track is to share work that has been published in journals with the software architecture community, while at the same time welcoming new authors to the community. ICSA 2021 partnered with Empirical

Software Engineering (EMSE), IEEE Software, and Journal of Systems and Software (JSS) to incorporate journal-first papers into its program. Two papers from IEEE Software were accepted for presentation: “Contrasting Big Bang with Continuous Integration through Defect Reports” and “Why and How Your Traceability Should Evolve: Insights from an Automotive Supplier.”

VI. WORKSHOP TRACK

ICSA 2021 workshops provide a unique forum for researchers and practitioners to present, learn, discuss, and explore the latest experiences, challenges, trends, and emerging R&D results in the field of software architecture. There was a call for workshops and all submissions were reviewed by a committee. Three workshops were selected.

The 2nd Workshop on Blockchain-Based Software Architectures (BlockArch) covers architectural issues, concerns, and solutions that emerge with blockchain technologies. It enables discussions on the possible synergies between blockchain technology and software architecture and how both topics can be related to provide software solutions that rely on blockchain advantages.

The 7th International Workshop on Automotive Systems / Software Architectures (WASA) addresses issues related to appropriate automotive system and software architecture and engineering techniques. It brings together researchers and practitioners in the area of automotive system and software architecture and engineering.

The 1st Workshop on Quantum Software Architecture (QSA) brings together researchers and practitioners from different areas of quantum computing and (classical) software architecture to strengthen the quantum software community and discuss architectural styles and best practices of quantum software as well as other aspects of the quantum software development life cycle.